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AUTHOR Buethe, Chris; Bates, Ivan W.
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ABSTRACT

Current Indiana school superintendents and assistant superintendents were sent a quick response survey form to determine the status of aerospace education in the schools. Feedback from these people was compiled and the results analyzed. Indications were that, while aerospace education was being taught in Indiana, efforts were enthusiastic but uncoordinated and scattered throughout the elementary and secondary schools. Recommendations to aid in the development of aerospace education in the Indiana schools were given. Over half of the book included survey forms and descriptions, by school, of aerospace education programs. (MA)

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The Status and Needs for AEROSPACE EDUCATION in Indiana Schools

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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INDIANA STATE UNIVERSITY

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Dr. Chris Buethe
Chairperson
Department of Secondary Education

Dr. Ivan W. Bates
Chairperson
Department of Aerospace Technology

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The Status and Needs for Aerospace Education in Indiana Schools

I. Scope of Research Problem:

Indiana schools appear to have a low degree of involvement in aviation/aerospace in contrast to Illinois and other nearby state schools systems. Increased knowledge of the status of aerospace education in Indiana may be useful to many Indiana agencies, and such status information should be sought.

Key Assumptions:

A. Units and/or courses emphasizing aviation/aerospace are appropriate for inclusion in Indiana school curricula.

B. School system curriculum leaders may benefit from new information in planning and projecting aerospace curricula.

C. Indiana State University has the personnel, curricula, and functions to be of benefit to schools regarding aerospace education.

D. Indiana State University may benefit from contacts made via a statewide study on aerospace education.

II. Research Methods:

A. Obtain addresses of all current (approximately 258) Indiana school superintendents and/or assistant superintendents for curriculum.

B. Mail quick response survey instruments to Indiana school superintendents and/or assistant superintendents (Attachment 1).

C. From feedback of the survey compile school leaders' data and opinions about aviation/aerospace education.

D. Analyze results and complete the research report.

III. Summary of Data:

The "Quick Response" survey instrument titled "Indiana Aerospace Education Status Study" was mailed to all Indiana school districts, to 258 superintendents and/or assistant superintendents in February, 1976. Responses from 135 school systems were returned for study by the researchers; a copy of the survey is included as Attachment 1. Responses to the questions indicated a positive attitude toward aerospace education by the responding school administrators.

The questions and responses were:

Q1. By level, our district now has aerospace education in the following number of schools, compared to the number we should have.

Type of School	Number Now Have	Number Should Have	Percent (Increase Requested)
Elementary (K-6)	167	303	(81%)
Junior High School (7-9)	153	228	(49%)
Senior High School (10-12)	45	77	(71%)
TOTAL	365	608	(67%)

Of 135 responding Indiana school district leaders, 41 (30%) indicated that their districts had one or more aerospace education unit(s) or course(s) somewhere in the established curricula, i.e./ Seventy percent of the respondents indicated that aerospace education was not offered at any level in the school district.

Those administrators whose school districts now offer aerospace education suggested a collective expansion of aerospace education at all levels, especially in grades K-6.

Q2. The duration of time of a typical aerospace education activity per level now and "should be"

	Unit of Study		Semester		Year or More	
Type of School	Now	Should	Now	Should	Now	Should
Elementary	51	79	4	17	9	21
Junior High School	58	77	25	25	19	21
Senior High School	54	81	14	52	9	31
TOTALS	163	237	43	94	37	73

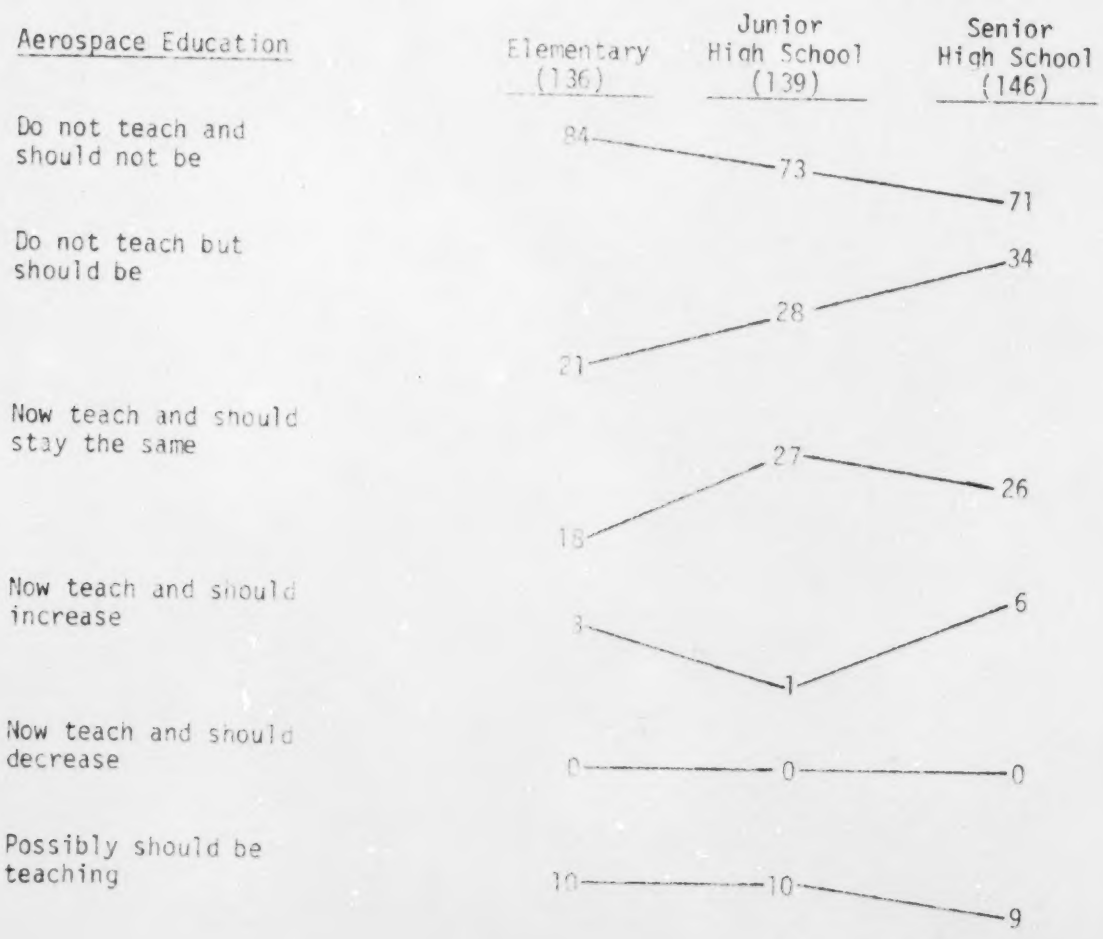
The total number of questionnaires returned was limited to 135 of 258 Indiana school districts polled (52%). A cautious assumption may be made that the limited number of respondents represent most of the school systems in Indiana that have high level administrators who are interested in the utilization and promotion of aerospace education in their schools.

The majority of the Indiana school administrators who responded to the questionnaire indicated that aerospace education curricula should be expanded from the present levels. Strongest support was given for units of study at any grade level, with added firm support for high school aerospace courses of one semester or year duration.

Little enthusiasm was reported for specific aerospace course expansion at the junior high level.

The combined responses to questions one and two indicate a clear request for expanded aerospace education in units of study, particularly at the elementary level.

Administrators' Responses by Aerospace Education Levels



Administrators typically did not wish to add aerospace education to the curriculum where it is not now offered. However, those administrators who now have aerospace education in their schools wish to retain it in the curriculum. Not a single administrator indicated a desire to decrease current aerospace education efforts, and some opted for an increase.

Q3. The names and addresses of all individuals responsible for aerospace education in our schools are: (please note grade level and role):

The information attained from question 3 identified 174 teachers and/or administrators involved in aviation education. The study was expanded in an attempt to obtain specific data on the curriculum-instruction status and needs of the aerospace teacher. The survey instrument is attached as Attachment II. The instrument was mailed to all 174 teachers in November, 1976. Forty-one replies were received from the initial mail survey. In evaluating the limited response a second mail-out was conducted, with 11 additional responses.

The major value of question 3 was the identification of 118 new educators, teachers or administrators, who were involved in aerospace education. One hundred forty teachers were identified by either the State Department of Public Instruction Consultant for Aerospace Education, members of the Indiana Aerospace Education Council, or the superintendent or assistant superintendent contacted via the survey instrument. The survey resulted in identifying of of eighty-four (84) teachers offering aerospace units, or courses who had not been previously identified by the state-wide support agencies.

Fifty-two (52) questionnaires were returned by current teachers of aerospace programs. Six of those returned noted that they did not teach aerospace units during 1976-1977.

NUMBERS OF INDIANA SCHOOL DISTRICTS
AND PROFESSIONALS UTILIZING
AEROSPACE EDUCATION

Indiana School Districts Contacted	258
Superintendents or Assistant Superintendents Contacted	258
School Districts Responding to Questionnaire	135
School Districts With Aerospace Education Noted	41
Total Teachers plus Administrators Reporting Aviation Education	174
Total Teachers Reported Utilizing Aerospace Education	140
Aerospace Education Teachers reported known by State Department of Public Instruction and Indiana Aerospace Education Council (combined total)	56
Total Teachers plus Administrators Identified as "New" in Aerospace Education Activities	118
Total "New" Teachers Identified	84
Total Teachers Returning Questionnaire Describing Their Aerospace Curriculum-Instruction	52
Total Aerospace Education Teachers Reporting Activity in Field During Current Term (1976-1977)	46

The above and related information dramatically reveals that many more teachers are utilizing aerospace education than can be revealed by counting known membership lists of aerospace interest groups.

Although not speaking with an organized voice, and not in evidence in the majority of Indiana schools, aerospace educators constitute a considerable force affecting the education of Indiana youth.

SPECIAL QUESTIONNAIRE FOR INDIANA AEROSPACE EDUCATORS*

Summary of Results: (N = 52 active, reporting teachers of aerospace education)

PART A. (25 MULTIPLE-CHOICE QUESTIONS)

Q1. Typically the aerospace teacher wants to develop pupil aerospace awareness, to motivate, and enrich teaching.

Q2. Identified AE (aerospace education) is usually in secondary schools.

Q3. The teacher or administrator is the one who most often initiates AE.

Q4. AE is most closely related to science (or technology).

Q5. The typical AE teacher had no college preparation in that field.

Q6. Half the AE teachers never attended an AE workshop.

Q7. The AE teacher usually teaches outside of AE. (i.e./AE is not a full time job)

Q8. An AE class of 16-20 is fairly typical.

Q9. Students are strong supporters of AE.

Q10. Most AE classes are within 10 miles of an airport.

Q11. AE teaching materials tend to come from personal files and free/inexpensive sources.

Q12. Aerospace students build models, especially those of aircraft.

Q13. Little commemorative emphasis is placed upon "Wright Brothers Day" or "1st man on the Moon Day".

Q14. Educational materials from many sources are used, including those from NASA, FAA, GAMA, and CAP (in that order).

Q15. NASA and aviation manufacturer's educational materials are numerous among those received each year.

Q16. Materials from Jeppesen-Sanderson and Cessna are regularly used by many in AE.

*Attachment 2.

Q17. Few Indiana AE teachers use materials from the Aerospace Education Resource Centers.

Q18. Varieties of aviation facility visits are utilized in AE.

Q19. Teachers assume that their AE students would be acceptant of an intelligent being from space and would not be frightened.

Q20. Student AE interest is seen as stable or rising.

Q21. AE's main value is viewed to be within general education.

Q22. Although varieties of other areas were emphasized, CAP course content was not emphasized in Indiana AE.

Q23. Hoosier Aerospace Educators tend not to be members of aerospace related organizations.

Q24. The curriculum structure of AE, where taught, tends to be traditional.

Q25. Indiana aerospace educators view flight and aerospace workshops as leading experiences in the preparation of aerospace teachers.

From the above, it appears that aerospace education as pupil-centered general education with an experience-based, multi-faceted, motivating-approach is supported. Aerospace teachers' workshops, though judged to be important, have not been attended by many Indiana aerospace educators.

PART B. OPEN-ENDED STATEMENTS (AE teacher comments)

1. An Ideal School Has the Following Aerospace Education:

   a. Basic course in aerospace education which covers the following areas (topics) (1) history and information on people and aircraft companies, (2) career opportunities, (3) elementary aerodynamics, (4) orientation flight.

b. Advanced courses covering the following: (1) pilot ground school, (2) aircraft construction, repair or rebuild.

- Aviation Education: Aerospace is a bad word.
- General course, history, careers, etc, pilot ground school, and building an aircraft.
- Sufficient equipment to make aerospace education a worthwhile undertaking.
- AFJROTC Unit - manned by competent and professional retired Air Force personnel.
- I think that aerospace education should be incorporated with a strong Earth Science class.
- At least one class in basic aviation and one in aerospace science.
- Aerospace careers and basic ground school minimum, vocational training when possible.
- A general aerospace education study to meet the demands of the age of flight and space.
- Aerospace topics should be included in all levels of public education.
- A basic course to acquaint students with the opportunities in the field of aerospace.
- Offers the student the opportunity to become acquainted with aviation related careers and activities, plus an introduction to ground school, and if possible thru use of a simulator the learning of some related skills.
- A K-12 integrated program that is interdisciplinary.

- Aerospace education as a regular part of the elementary or middle school science curriculum.
- A three (four) year program covering all facets of the subject, including industrial arts, social sciences, science, and career information.
- Flight subjects: navigation, propulsion, civil aviation and facilities, theory of flight, aviation history. Space subjects: space technology and space cosmology.

2. To increase aerospace education in schools, it is best to:
   - Convince the State Department of Education that aerospace education should be offered as a part of all school programs.
   - Educate superintendents.
   - Showing its importance to school officials.
   - Make it relevant to todays needs.
   - Increase AFJROTC units at other high schools.
   - I think that aerospace education should be incorporated with a strong earth science class, and run in-service institutes.
   - Have catalyst - someone to project it and show the symplicity of starting a program.
   - Involve student in a worthwhile project, relate to things students can identify with in everyday life.
   - Present the needs and opportunities for the student to the administration (superintendent-principal).
   - Provide courses which show the impact of aerospace technology upon our lives and how we might become involved in that field.

- Present talks and demonstrations, give simulator familiarization rides, publicize and give awards for model building and keep administrators aware of new developments. Field trips are also of value.
- Establish workshops for teachers and have them funded by an agency other than the school corporations.
- Advertise by showing your course, events, etc. to others; exposure.
- Make it a required subject.

3. The State of Indiana can best assist aerospace education by:
   - Appoint a full-time aerospace supervisor or consultant with a strong background and interest in aerospace education.
   - Visit my program.
   - Showing its importance to school officials.
   - Providing assistance in the purchase of equipment suitable to a comprehensive program.
   - Increasing ROTC units and advising school boards of all advantages of ROTC.
   - Allowing it to count for the science requirement for graduation from high school (if it doesn't yet).
   - Providing someone, knowledgeable in aerospace, to guide them in establishing aviation/aerospace curricula.
   - Funding the program in some way and making available more hardware.
   - Standardizing programs and establishing the value of aerospace education to school administration and councilors.
   - Sponsor aerospace workshops for interested teachers with little or no cost to participants.

- Providing materials including films to be utilized by the schools; a curriculum guide would be very useful also.
- Possible improvement thru more P.R. work at meetings of school boards, administrators and thru establishment of scholarships to teachers workshops as has been done in Tennessee.
- Helping with the workshops, preparing curriculum guides on aerospace education.
- Help advertise by showing courses, events, etc. to others; exposure.

When aerospace education is NOT offered to a school, it is usually because:

- Non-support from administration (often because of narrow-minded attitude).
- No teacher interested.
- It is thought of as a frill.
- There is no qualified person available to teach the course.
- They aren't aware of the program (ROTC) and funding of it.
- Lack of certified teachers; not room in the science curriculum with all the other sciences.
- No one interested in or feels qualified to teach such.
- Lack of interest or lack of awareness of its value.
- There is little knowledge by anyone of its value to general education and society as a whole.
- No one sees the need for such education.
- Probably lack of interest or time available in a student's schedule.
- No aviation oriented people in the system.

- Lack of information about such programs.
- No interest, no money or both.
- It is not included in the science program.
- No one is interested or knowledgeable enough to start a course.
- Lack of confidence and foresight by administrators and lack of money from school board. Also schools are flooded with curriculum offerings already.

5. My best (specific) sources of aerospace information are now:

- FAA, NAEA, CAP, EAA, and aviation magazines.
- Cessna
- Textbook and personal data.
- HQ ROTC, Maxwell AFB, Alabama and 25 years experience in Air Force duties.
- A source book put out by NASA.
- Careers, airport services, space science-ground school.
- Cessna, NAGA, Sanderson-Jeppesen.
- National Aerospace Education Association, through it all of the many other sources are listed.
- Jeppesen-Sanderson, Civil Air Patrol, and FAA.
- My own knowledge as a science teaching private pilot, and rocket "buff".
- Sanderson-Jeppesen, FAA, NASA, and NAEA.
- People who are involved in such programs.
- Survey courses on propulsion, basic aerodynamics, development of aerospace.
- United States Air Force.
- FAA

An aerospace education consultant can best assist me by:

- Spending some time on aerospace matters.
- Educating my boss.
- Supplying a list of firms where used equipment (flight trainer, wind tunnel, etc.) may be purchased at reasonable costs.
- Reviewing classes presented for up-grading.
- Working to get it recognized as a "legitimate science".
- Do not need.
- Helping me secure useable materials for the classroom such as instruments, models, simulators, charts, etc.
- Directing attention to suppliers of the "things" of aerospace education. Specifically, the hardware of aviation.
- Providing materials in addition to some I have. Also guest speakers in various fields of aerospace would be welcome.
- Information on activities, structure, etc. of aviation activities in Indiana.
- Preparation of materials, providing information about how others utilize such programs.
- Convince school administration of value in taking short flights (liability problems right now).
- Ways to increase awareness of teachers to implement aerospace concepts and explanation of models of curriculums on aerospace education.
- My teaching license expired last March. I need the State Department of Public Instruction to acknowledge that my aerospace education is at the masters degree level and re-issue my license.

7. Furthermore . . .

- I cannot understand why there are only three (3) schools in Indiana and eleven (11) are authorized to have JROTC. What better way for aerospace studies than JROTC in high schools and then advance to college ROTC or on to aerospace studies without military involvement.
- We need to increase our P.R. and show the public and administration the value of what aerospace education has to offer.
- I am interested in seeing aerospace education in every school.
- I feel we, as a nation and as educators, have "let down" our interest in aerospace education since man has reached the moon and beyond. We need to remind the public of the many spin-offs of space technology to increase their appreciation and knowledge of the countless benefits to man from these efforts. Federal funding for future space efforts could be seriously jeapordized unless the general public is made aware of the numerous benefits of aerospace research and technology.
- I am an elementary teacher. The material taught comes to me through our elementary science coordinator., I know very little about the topic.
- I had 20 years USAF time and the maximum allowable credit should be given toward teacher or PERF retirement. Had I entered teaching from industry or an out-of-state school system they would certainly have given me credit.

Discussion of Results

The status of aerospace education in Indiana appears to be one of uncoordinated but enthusiastic efforts on the part of individual teachers scattered throughout the elementary and secondary schools of the state.

Many of the currently active aerospace educators of the state have indicated specific ways in which they may be assisted in improving their efforts in curriculum and instruction related to aerospace.

A review of the results of the status study indicates that identifiable needs exist, that aerospace education can be a helpful part of the general education of pupils at all levels in Indiana, and that coordination of assistance at the state level may be a viable approach to improving educational efforts about aviation and space.

Aviation/aerospace program descriptions were supplied by a limited number of survey respondents. The more complete and specific high school curricula descriptions are included in attachment three.

Recommendations:

The following specific recommendations, listed in order of time sequence rather than an order of implied importance, are made upon the basis of results of the study:

1. Set up a working committee representing the State Department of Public Instruction, the State Aeronautics Commission, the Indiana Aerospace Education Council, the Indiana Legislature, and the authors of this study, to discuss the apparent status and needs of aerospace education in Indiana in relation to defined educational goals of the State of Indiana.

2. Consonant with the goals defined and/or clarified through phase 1 above, develop a statewide plan and related budget for actions determined appropriate to assist aerospace education in Indiana.

   It is possible that a system of aerospace education workshops may be developed, to be provided on a summer and/or inservice basis through the cooperative efforts of state institutions and to be geographically distributed throughout the state to serve the needs of the maximum number of Indiana citizens. These efforts should emphasize help for generalist teachers, especially at the elementary level.

3. Annual evaluations of results of expenditures for activities in aerospace education should be conducted, and future plans directly modified in light of evaluation results.

Progress and Prospects

Through the efforts of the Indiana Aerospace Education Council, the State Department of Public Instruction, and the Aeronautics Commission of Indiana, Indiana will have an approved endorsement in aerospace education for teachers, effective fall, 1978. Many teachers will in the future be able to qualify to teach aerospace education, and should be encouraged to do so, in order to better serve the students of Indiana's schools.

(Attachment 1)

INDIANA AEROSPACE EDUCATION STATUS STUDY

I. By Level, our district has Aerospace Education in the following number of schools, compared to the number we should have

Type of School	NUMBER NOW HAVE	NUMBER SHOULD HAVE
ELEM. (K--6)		
JHS (7--9)		
SHS (10-12)		

II. The duration of time of a typical Aerospace Education activity per level now and "should be"

✓ All that apply

	Unit of Study		Semester		Year or More	
Type of School	NOW	SHOULD	NOW	SHOULD	NOW	SHOULD
ELEM.						
JHS						
SHS						

III. The names and addresses of all of the individuals responsible for Aerospace Education in our schools are: (please note grade level and role)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

(Attach additional sheet if necessary)

(Attachment 2)

_____ (name)

_____ (address)

_____ (school role)

You have been identified as an educator who utilizes aviation and/or space curricula.

Please assist us in surveying the current status and needs of aerospace education in Indiana schools by taking a few minutes to complete this questionnaire. Your responses will be helpful to State agencies in Indiana and to many others who see the value of aerospace education to pupils.

Part A. Choice responses. Please circle EACH LETTER that corresponds to an appropriate answer. You may mark more than one answer.

N 1. My interest in developing aerospace education lies in
- 4 a. starting a new course
- 18 b. enriching my present teaching
- 7 c. providing alternative curricula
- 19 d. motivating students
- 28 e. developing awareness of aviation/aerospace

2. Aerospace education in my school district is
- 6 a. mainly at elementary level
- 24 b. mainly at secondary level
- 1 c. equally at elementary and secondary
- 11 d. not now included

If your answer to Q#2 is "D", proceed to Part B.

3. Aerospace education came to my school mainly through the efforts of (a, an)
- 19 a. teacher
- 6 b. pilot
- 9 c. principal
- 10 d. superintendent
- 11 e. me

4. Aerospace education in my school is most closely related to
- 11 a. industrial arts, technology
- 2 b. mathematics
- 20 c. science
- 2 d. social-political sciences
- 0 e. other disciplines

5. My formal college preparation in aerospace education, in semester hours equivalent, was
- 17 a. 0
- 4 b. 1-3
- 1 c. 4-6
- 2 d. 7-9
- 8 e. 10 or more

N 6. I have attended the following number of aerospace workshops of a week or longer duration:
- 25 a. 0
- 7 b. 1
- 1 c. 2
- 0 d. 3
- 3 e. 4 or more

7. I typically teach the following number of aerospace classes/day
- 11 a. 0
- 9 b. 1
- 5 c. 2
- 2 d. 3
- 6 e. 4 or more

8. The average number of students per each of my aerospace classes is
- 4 a. 1-15
- 12 b. 16-20
- 3 c. 21-25
- 7 d. 26-30
- 3 e. 31 or more

9. In my school, aerospace education is desired by (the)
- 8 a. school board
- 14 b. administration
- 15 c. faculty
- 22 d. students
- 10 e. parents

10. My school is approximately the following number of miles from the closest general aviation airport:
- 16 a. 0- 5
- 10 b. 6-10
- 9 c. 11-25
- 2 d. 26-50
- 0 e. over 50

N	11. My aerospace teaching materials come mainly from
23	a. personal files
11	b. library resources
19	c. free & inexpensive sources
13	d. other sources

	12. My aerospace students typically build
16	a. model aircraft
8	b. model spacecraft
5	c. other models
8	d. no models
6	e. an aircraft

	13. In my aerospace teaching, special emphasis is placed upon "commemorative"
5	a. Wright Brothers Day
5	b. 1st Man on the Moon Day
18	c. other aerospace events

	14. The following organization(s) has (have) aerospace education material that most suit my pupils' needs:
13	a. CAP (Civil Air Patrol)
19	b. FAA (Federal Aviation Adm.)
16	c. GAMA (Gen. Aviation Mfg. Assn.)
11	d. NAEA (Nat'l Aerospace Ed. Assn.)
22	e. NASA (Nat'l Aeronautics & Space Adm)

	15. At least once per year I receive aerospace education materials from
7	a. CAP
16	b. FAA
25	c. NASA
21	d. Aviation manufacturers
14	e. other sources

	16. I regularly use aerospace materials from
2	a. Aero Products Research
2	b. Beech
15	c. Cessna
8	d. Piper
19	e. Sanderson-Jeppesen

	17. I regularly use aerospace materials from
10	a. GAMA
1	b. AERC's (Aero Ed. Resource Ctrs.)
7	c. NAEA
5	d. EAA (Experimental Aircraft Assn.)

	18. My students, as part of aerospace education, visit the following types of aviation facilities:
15	a. fixed base operator
12	b. commercial airline
18	c. FAA air traffic control
13	d. aircraft maintenance
24	e. airport

N	19. If my students learned of an intelligent being (not man) found in space, they would be
6	a. pleased
3	b. frightened
12	c. surprised
19	d. acceptant

	20. In my school, student interest in aerospace is
17	a. rising
1	b. declining
17	c. stable

	21. Of these, the main value of aerospace education in my school is
11	a. career education
8	b. exploration
14	c. motivation
23	d. general education
8	e. occupational preparation

	22. My aerospace course content emphasized (the)
16	a. historical
15	b. socio-economic-political-cultural
16	c. pilot ground school
16	d. rockets/space
2	e. Civil Air Patrol

	23. I am now a member of the
0	a. AAI
7	b. AOPA
6	c. CAP
3	d. EAA
9	e. NAEA

	24. The structure of my aerospace curriculum is
10	a. interdisciplinary
15	b. distinct discipline
7	c. independent study
4	d. phase elective/mini-course

	25. The preparation of an aerospace teacher should include
22	a. flight experience
21	b. aerospace teachers' workshop(s)
14	c. pilot's license
6	d. aerospace industry experience
16	e. undergrad aerospace course(s)

PART B. OPEN-ENDED STATEMENTS:

1. AN IDEAL SCHOOL HAS THE FOLLOWING AEROSPACE EDUCATION:

2. TO INCREASE AEROSPACE EDUCATION IN SCHOOLS, IT IS BEST TO:

3. THE STATE OF INDIANA CAN BEST ASSIST AEROSPACE EDUCATION BY:

4. WHEN AEROSPACE EDUCATION IS NOT OFFERED IN A SCHOOL, IT IS USUALLY BECAUSE:

5. MY BEST (SPECIFIC) SOURCES OF AEROSPACE INFORMATION ARE NOW:

6. AN AEROSPACE EDUCATION CONSULTANT CAN BEST ASSIST ME BY:

7. FURTHERMORE . . .

(Attachment 3)

AVIATION/AEROSPACE Program Description

Please type your responses to the following items on separate 8½" x 11" sheet(s) using the named categories. We will then be able to reproduce your copy directly for inclusion in a State of Indiana summary report.

A. School

1. Name & Address
2. Aviation/Aerospace Instructor(s). Indicate related qualifications like FAA, military, degrees held.
3. Year program began.
4. Average enrollment per year.

B. Curriculum

1. Department or discipline (eg./science)
2. Courses, credit given, (elective, etc.)
3. Objectives, behaviorially or generally stated.
4. Level of program. (Elem., JHS-Middle School, High School)
5. Duration of program (weeks per year)
6. Co-curricular activities. (eg./clubs)

C. Enrollees.

1. Average number per year: _____ Male _____ Female
   _____ Caucasian _____ Other
2. Principal reasons students enroll. (in order of importance)

D. Facilities & Equipment

1. Classroom, laboratories
2. Training Aids
3. Airport(s)
4. Other

E. Special Descriptors

(You may include photographs, 4" x 5" glossy preferred - other appropriate supplements)

Thank you for sharing your aviation/aerospace information with others in Indiana.

AVIATION/AEROSPACE Program Description

A. School

1. Name & Address: Anderson High School
1301 Lincoln St.
Anderson, IN 46016

2. Aviation/Aerospace Instructors & related qualifications:
George M. Mock Certified flight instructor (airplane single & multiengine, instrument) - B.S.- M.A. Industrial Education- U.S. Airforce aviation mechanic.

3. Year program began: 1967

4. Average enrollment per year: 60

B. Curriculum

1. Department: Industrial Education

2. Courses, credit given, (elective, etc.): Aerospace, 1 semester credit (elective)

3. Objectives: General education and information- (consumer employment understanding)

4. Level of program: Grades 9-10-11-12

5. Duration of Program: 1 semester 18 weeks

6. Co-curricular activities: Aerospace Club

C. Enrollees

1. Average number per year: 55 Male 5 Female
0 Caucasian 0 Other

2. Principal reasons students enroll: Interest in aviation and aircraft

D. Facilities and Equipment

1. Classroom, laboratories: 50 X 50 power and Transportation lab.

2. Training aids: Numerous aircraft components, audio-visual equipment and mock-ups.

3. Airports: Anderson municipal, Anderson Ace Airpark.

AVIATION/AEROSPACE Program Description

A. School

1. Paul Harding High School
   6501 Wayne Trace
   Fort Wayne, Indiana 46816

2. Everett H. Sauders - Aviation/Aerospace Instructor
   BS - MS Degrees in Math and Science
   World War II Multi-engine pilot
   Current Commercial FAA license with ratings:
   Multi and single engine land
   Flight instructor

3. Our program began in 1974.

4. Average enrollment per year is 20.

B. Curriculum

1. Science Department

2. Offered in one course as an elective, 2 credits given.

3. It is a survey course in Aerospace.

4. It is a High School (11th and 12th) level of program.

5. Duration of program is 36 weeks.

6. There are no co-curricular activities at present.

C. Enrollees

1. The number this year, 1976-77, is 16 - 15 male white, 1 male black.

D. Facilities and Equipment

1. We have minimal training aids at present

2. Much use is made of Baer Field Airport.

AVIATION/AEROSPACE Program Description

A. School

1. Highland High School
   9135 Erie St.
   Highland, Indiana 46322
2. Lt. Col. Robert B. Fox III, USAF (Ret.)
   B.S. Mil Science
   M.S. Systems Management
   Command Pilot USAF
   Commercial Pilot-Inst.-FAA
3. 1968
4. 100

B. Curriculum

1. Independent Dept. of Aero. Ed.
2. 3 and 4 year courses as full credit electives
3. Survey every aspect of aviation and space.
4. High School; 9-12.
5. Full semester--Full year courses.
6. Model Rocketry
   Color Guard
   Fund Raising
   Float Entries
   Patriotic Ceremonies
   Awards Banquet

C. Enrollees

1. 90 Male 10 Female

   100 Caucasian 0 Other
2. Interest in aviation
   Like the uniform OK
   The Military (Also a reason many do not enroll.)

D. Facilities & Equipment

1. Standard size classroom
   Similar size storeroom for uniforms & equipment
2. Standard Audio-Visuals--many USAF, NASA & FAA films used.
3. Griffith Airport (Gen. Av.)
   Chicago-Hammond Airport (Gen. Av.)
   Gary Municipal Airport (Gen. Av.)
   Chicago-O'Hare Airport (Major Commercial)
   NAS Glenview (Navy)
   Grissom & Chanute Air Force Bases

BEN DAVIS HIGH SCHOOL

A. School

1. Ben Davis High School / 1200 N Girls School Rd/ Indpls., IN 46224
2. Instructors - E.A. Cushman - Masters - 4 yrs. Nasa
   Clifford Hawkins - Masters - 3 yrs Nasa
   Robert Weidenbenner - Bachelors- Purdue Aero.
3. Program Began - Sept. 1968
4. Average Enrollment - 500 Students

B. Curriculum

1. Aerospace
2. Courses
   a. Careers 1 Credit - Election
   b. Space Science " "
   c. Basic Gr. Sched." "
   d. Adv. Gr. " " "
   e. Airport Services 2 Credits - Elective
   f. Basic Avia Maint.6 Credits - Elective
3. Objectives - Generally stated
4. Level Of program - High School
5. Duration 36 Weeks per Year
6. Co-Curricular - Aero Club

C. Enrollees

1. Average number per year: 400 Male - 100 Female
   475 Caucasions 25 other
2. Principal reasons students enroll: Interests, career, credit

D. Facilities & Equipment

1. 2 Classrooms - 1 lab for maintiance Instruction
2. Training Aide - Sanderson, Jeppeson
   Faa Film - Nasa Film, Rockets, Kites
   GAT I - Trainer
3. Weir Cook - Speedway - Eagle Creek
4. Allison Powerama

AVIATION/AEROSPACE PROGRAM DISCRIPTION

A. School

1. Lowell Senior High School
2051 East Commercial Ave.
Lowell, Indiana 46356

2. Lt. Colonel James H. Acton, USAF(Ret)
Master Navigator, 20 years flying experience
B.S. in Education
completed 24 hours of a 30 hour masters program

Master Sargeant Carl R. Gayfield, USAF(Ret)
20 years in the Air Force
48 hours of college work

3. September 1969

4. 100 Students

B. Curriculum

1. Science Department

2. Four year program available, one science credit per semester completed, elective.

3. The instructional objectives of the Air Force Junior ROTC Aerospace and Leadership Education program are for each student to:

a. Understand the impact of aerospace activities on the world in which he lives.

b. Become familiar with the various types of aeros vehicles and the principles that govern their opera

c. Develop improved attitudes of personal integrit self-reliance, self-discipline, patriotism, citizen and respect for constituted authority.

d. Develop better habits of orderliness and precis to prepare him for positions of leadership and resp citizenship.

e. Know some of the vocational, educational, and leadership opportunities offered by the United Stat Air Force and other aerospace agencies.

f. Become familiar with the purpose and structure the defense establishment of the United States and particularly the United States Air Force.

g. Be familiar with the customs, courtesies, and traditions of military service and be able to perform basic military skills.

4. High School

5. Two full semesters per school year

6. Curriculum in Action which is field trips to various Air Force Bases, airports, and other aerospace facilities of interest. We also have the following activities within our organization:

a. Rocket Club

b. New letters

c. Military Ball

d. Awards Banquet

e. Social Committees for pool party, picnic, hayride, Christmas Party, etc.

C. Enrollees

1. 65 male students 35 female students
93 caucasian 2 other

2. The reasons students enroll in the AFJROTC program are:

a. science credit

b. like airplanes and rockets and interested in what we have to offer.

c. curious about the course and interested in social activities.

d. interested in a possible military career.

e. desire to receive an Air Force scholarship.

f. want a nomination to the Air Force Academy. (we can nominate up to three qualified students per year.)

D. Facilities & Equipment

1. One classroom

2. Air Force provides all training aids required.

3. We are about 20 miles from the nearest civilian airport. We are relatively close to two Air Force Bases.

4. All books and uniforms are supplied to our students free of charge.

E. Special Descriptors

Although our program is supported and sponsored by the Air Force there is absolutely no military obligation incurred by the students. Additionally, we are not recruiters for the Air Force or any other service.

Av./Ed. Program Description

A. School:
   1. Elston High School, Detroit & Lafayette Streets
      Michigan City, Indiana
   2. Instructors: Earl McAnally
      B.S. in Education (Physical Ed. and Ind. Arts)
      Four years active duty in Air Force, two as a combat Glider Pilot
      Twenty seven years in Air Force Reserve-retired as Lt. Colonel.
   3. Program began in 1970
   4. Average enrollment varies between 15 to 25 per class for two classes.

B. Curriculum:
   1. Discipline - Flight Technology
   2. Elective - 1 year - two credits
   3. Objectives - General for the program and Behavioral for units
   4. Level of program is 10-12
   5. Duration - 38 weeks
   6. Co-curricular - none

C. Enrollees:
   1. ave number per year:
      35 male
      5 female
      38 caucasian
      2 other
   2. Reasons for taking:
      (a) interested in aviation
      (b) sounds like fun
      (c) to get 2 credits
      (d) Boy friend in class
      (e) like the teacher

D. Facilities and Equipment
   1. classroom - converted drafting room
   2. most of Sandersons visual aid equipment of classroom size, plus things for individual use such as E6B computers, plotters, charts etc.
      We use the Sanderson text and workbook.
      We have two Flightmatic simulators that are used to give the opportunity to gain knowledge and develop skills.
   3. We visit the facilities at a commercial airport in South Bend once a year.

A. School

1. Don E. Roberts
   Aviation Technology
   Noblesville High School
   Noblesville, In. 46060
2. Private Pilot, Naval Aviation, BS & MA
3. Program started in 1964
4. 60 students in program: 100 students in mini course.

B. Curriculum

1. Industrial Arts Department
2. Elective, 2 credits
3. General Objectives
4. High School level program
5. Duration of program is one year in length.
6. Open shop on Wed, night used for work on projects.

C. Enrollees.

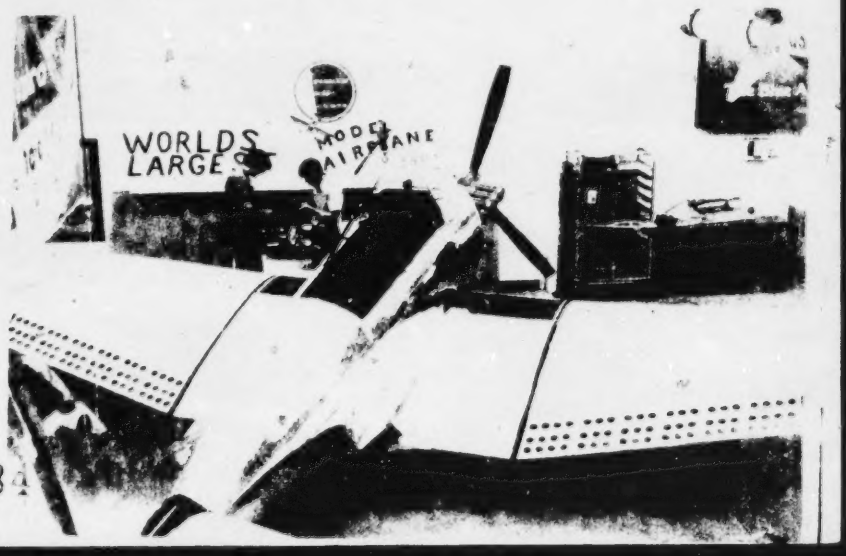
1. Average number of students per year: 60 Male 0 Female
   59 Caucasian 1 Other
2. Principal reasons students enroll.
   1. Interest
   2. Education
   3. Vocation

D. Facilities & Equipment

1. Classroom, laboratories are very good.
2. Training aids are utilized throughout the program.
3. Fieldtrips are taken once or twice per year.

E. Special Description of present project:

See photo;



A. School

1. Washington High School
   608 E. Walnut St.
   Washington, Ind. 47501

2. Bryan A. Walden
   Private Pilot
   FAA Basic Ground Instructor Certificate
   Aviation/Aerospace Workshop (ISU 1972)

3. Fall 1972

4. 20 Students

B. Curriculum

1. Industrial Arts Dept.

2. Aviation/Aerospace Careers - Fundamentals (Full-credit elective)

3. Objectives:
   a. Awareness of A/A history and impact on society
   b. Student identifies qualifications, employment opportunities, required training, etc. for various career areas.
   c. Students aquire basic aeronautical knowledge for private pilots license

4. High School

5. 36 weeks (2 semesters)

6. Field trips
   Local and cross-country orientation flights (optional)

C. Enrollees

1. 20 students per year 17 Male 2 Female
   19 Caucasian 1 Other

2. a. Interest in aviation
   b. Career information
   c. To fullfill credit requirements for graduation

D. Facilities & Equipment

1. 1 standard classroom

2. ADF and VOR Magnetic training boards (Sanderson)
   Static airplane models

3. Daviess Co. Airport Washington, Ind. (3 miles)